

**WHAT IS CLAIMED IS:**

1. A carriage driving apparatus comprising:  
a motor for driving a carriage;  
a storage device that stores a plurality of sets of parameters necessary for controlling the motor; and  
a control device that selects one set of parameters stored by the storage device and controls the motor based on the one set of parameters,  
wherein the one set of parameters to be selected are determined based on the behavior of the carriage in a constant speed area when the carriage is driven by the motor.
2. The carriage driving apparatus as set forth in claim 1, wherein the one set of parameters include at least two parameters among P gain, I gain and D gain for controlling the motor by PID control and a variety of parameters which characterize a driver of the motor.
3. The carriage driving apparatus as set forth in claim 1, wherein the motor is driven based on each set of parameters with respect to each target speed of the carriage in the constant speed area, and the one set of parameters to be selected with respect to the each target speed is determined based on the behavior of the carriage in the constant speed area.
4. The carriage driving apparatus as set forth in claim 3,

wherein a set of parameters, based on which the minimum value of the speed of the carriage is the largest when the motor is driven based on the each set of parameters, are determined to be the one set of parameters to be selected with respect to the each target speed.

5. The carriage driving apparatus as set forth in claim 3, wherein a set of parameters, based on which one of the maximum value and the minimum value of the speed of the carriage in the constant speed area is beyond a predetermined range with respect to the each target speed, are determined not to be the one set of parameters to be selected with respect to the each target speed.

6. The carriage driving apparatus as set forth in claim 1, wherein the storage device stores a plurality of sets of parameters respectively expected to be optimum in accordance with the amount of load to the drive system of the carriage.

7. The carriage driving apparatus as set forth in claim 1, further comprising a temperature detection device for detecting the temperature in the vicinity of the drive system of the carriage, wherein the control device selects the one set of parameters also referring to the temperature detected by the temperature detection device.

8. The carriage driving apparatus as set forth in claim 7, wherein the one set of parameters to be selected by the control device at a low temperature is the same regardless of the

behavior of the carriage in the constant speed area.

9. The carriage driving apparatus as set forth in claim 7, wherein the one set of parameters to be selected by the control device at a low temperature is determined also referring to the behavior of the carriage in the constant speed area.

10. A carriage driving apparatus comprising:

a motor for driving a carriage;

a storage device that stores a plurality of sets of parameters necessary for controlling the motor;

a control device that selects one set of parameters stored by the storage device and controls the motor based on the one set of parameters; and

a temperature detection device that detects the temperature in the vicinity of the drive system of the carriage,

wherein the control device selects the one set of parameters referring to the amount of load to the drive system of the carriage when the carriage is driven by the motor and the temperature detected by the temperature detection device.

11. The carriage driving apparatus as set forth in claim 7, wherein the storage device stores a plurality of sets of parameters respectively expected to be optimum in accordance with the amount of load to the drive system of the carriage and the temperature in the vicinity of the drive system of the

carriage.

12. A motor control method for driving a motor based on one set of parameters selected from among a plurality of sets of parameters necessary for driving and controlling the motor and stored by a storage device, wherein load applied to the motor is previously found out and the one set of parameters are selected based on the load.

13. The motor control method as set forth in claim 12, wherein the temperature in the vicinity of the drive system of the motor is detected and the one set of parameters are selected also referring to the detected temperature.